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Xeromphalina junipericola, a rare species new to southeastern Europe

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Abstract — *Xeromphalina junipericola,* a species new to Turkish and Macedonian mycobiota, is described. This wood-decaying fungus has been collected on stumps of juniper trees (*Juniperus excelsa* and *J. foetidissima*) in six localities situated in the central and southern part of Turkey, and on stump of *Juniperus excelsa* in one locality in Macedonia. It is a very rare species previously known only from a few localities in Spain. These finds will provide a better picture of its distribution area.

Key words — *Mycenaceae*

Introduction

Xeromphalina junipericola is a rare species previously known from only a few localities in Spain. The species has a violaceous to purplish tinged pileus, lamellae, and stipe, fusoid, non-coralloid cheilo- and caulocystidia, and small spores. Moreno & Heykoop (1996) described this species from Guadalajara province in Spain as a saprobe on *Juniperus thurifera*. The same area has been visited a number of times and the species has been collected again on the same substrate (Heykoop & Moreno 2007, Moreno et al. 2002).

Specimens collected during a collaborative project between the Institute of Biology within the Faculty of Natural Science and Mathematics in Skopje, the Republic (FYR) of Macedonia, and the Biology Department within the Science and Art Faculty, Selçuk University, from Konya, Turkey, have extended the known range of *X. junipericola* to southeastern Europe. A description based on several new collections is provided below.

Materials and methods

The material has been examined with Melzer's reagent and 5% KOH. The identification has been verified by consulting Antonín & Noordeloos (2004).

All specimens are stored at the Mushroom Application and Research Centre (Selçuk University, Konya, Turkey) or MCF, the Macedonian Collection of Fungi (Institute of Biology, Ss Cyril and Methodius University, Skopje, Macedonia).

Taxonomy

Xeromphalina junipericola G. Moreno & Heykoop, Z. Mykol. 62: 38, 1996

Figs 1–5.

Pileus 0.2–0.6 cm broad, globose to cyathiform at maturity, brown-reddish with wine-brown tinges, covered with yellowish-orange flocci. Gills decurrent, narrow, rarely anastomosed, with scarce lamellulae, grey to grey-violaceous, L = 26–30, l = 1–2. Stipe 5–14 × 0.5–1.5 mm, cylindrical, concolorous with pileus or paler, covered with a whitish powdery bloom, with floccose base formed by ochraceous-orange hyphae. Taste mild. Odor not distinctive.

Spores (3.4–)4.0–5.0(–5.4) × (2.0–)2.5–3.0(–3.2) µm, ellipsoid to cylindrical-ellipsoid, smooth, thin-walled, hyaline, amyloid. Basidia 20–25 × 4.0–5.0 µm, 4-spored, clavate. Cheilocystidia 27–39 × 6.5–10 µm, fusoid to broadly utriform, (sub) lageniform, sometimes slightly irregular, long and narrow, thin-walled. Trama hyphae cylindrical, thin- to slightly thick-walled, mostly incrusted, up to 13 µm wide, incrustation brown in KOH. Pileipellis consisting of cylindrical, slightly thick-walled incrusted hyphae, up to 10 µm diam, pigment brown in KOH. Circumcystidia numerous, 32–52 × 5.0–8.2 µm, cylindrical, clavate, fusoid, irregular to subcoralloid, slightly thick-walled, smooth, pale to dark brown in KOH. Stipitipellis of parallel, cylindrical, slightly thick-walled, incrusted hyphae, brownish yellow in H_2O, yellow-brown in KOH, up to 10 µm diam. Caulocystidia 45–85 × 6.7–8.6 µm, cylindrical, clavate, (sub)fusoid, (sub)utriform, sometimes rostrate, slightly thick-walled, pale brown to yellow-brown in KOH. Clamp connections present.

Discussion

Xeromphalina junipericola is characterised by violaceous to purplish tinges in the pileus, lamellae, and stipe, fusoid, non-coralloid cheilo- and caulocystidia, and small spores. Together with "*X. minutissima*" Esteve-Rav. (nom. prov.), it has the smallest spores among European *Xeromphalina* species.

The distribution of this species has been insufficiently known until now and is known only from three countries — Spain, Macedonia, and Turkey. Our research up to now indicates that this species follows the distribution of scale-leaf juniper trees in Europe, such as *Juniperus excelsa, J. foetidissima,* and

Figs. 1–5. *Xeromphalina junipericola.* 1. Basidiocarps. 2. Spores. 3. Cheilocystidia. 4. Pileipellis. 5. Caulocystidia and hyphae with clamp connections.

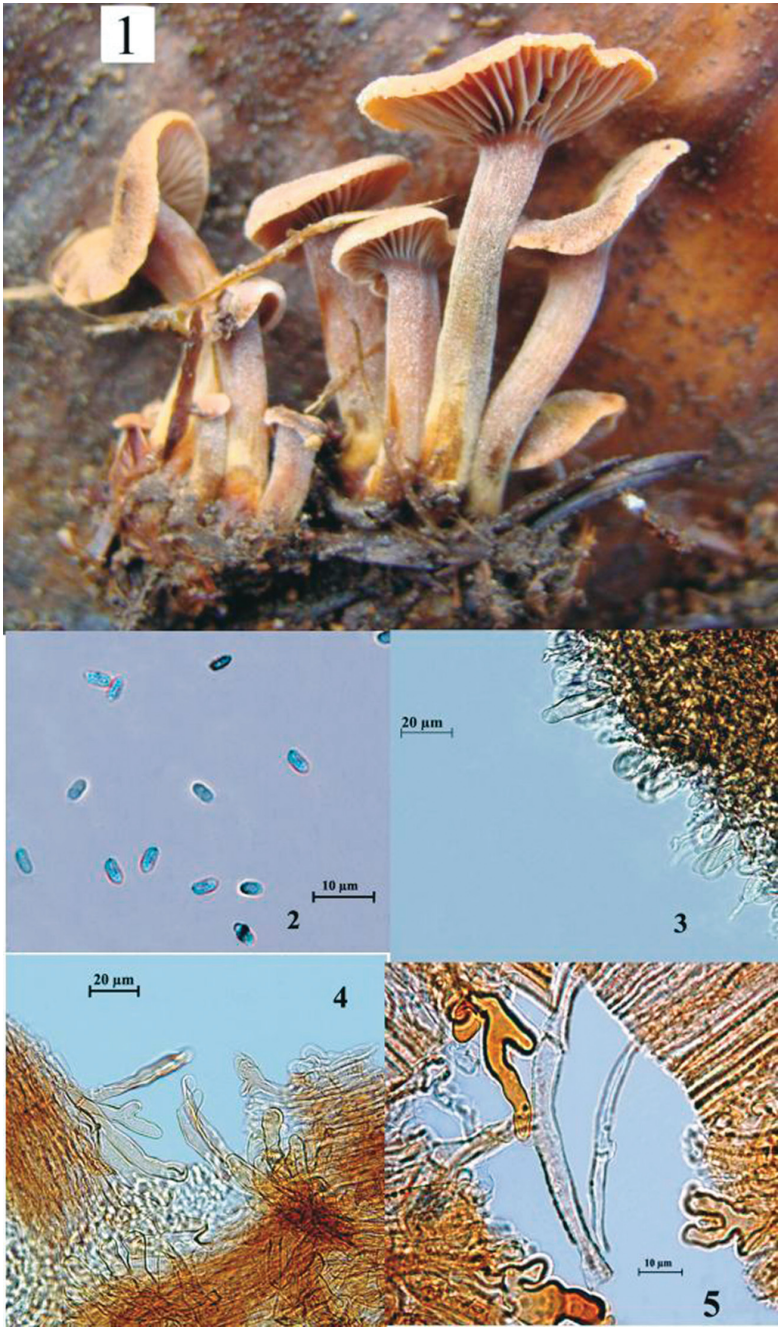
1
2
10 µm
20 µm
3
20 µm
4
10 µm
5

Fig. 6. *Xeromphalina junipericola* distribution.

J. thurifera. In all cases the material has been collected as a saprobe on stumps of different juniper trees. The collecting time was spring (April to May) and autumn (October to December).

In Turkey, a total number of five specimens were collected on different juniper species from four different localities in the southern and central part of the country. In Macedonia the material was collected on a *Juniperus excelsa* stump in a pure juniper forest at an altitude of ~300 m. The species was collected only once, in autumn 2003.

Specimens collected: **Turkey**—Adana: Saimbeyli Yatiloluk: mixed juniper forest with *Abies cilicica*, on stump of *Juniperus* sp., 1,644 m, 28 October, 2008, leg. H.H. Dogan & M. Karadelev, HD4067; HD 4092. Ankara: Nallihan — Hosebe parki: pure *Juniperus foetidissima* stand in *Pinus nigra* forest, on stump of *J. foetidissima*, 1,350 m, 12 May, 2005, leg. H.H. Dogan, HD2028. Antalya: Elmali — Ciglikara forest (Sevindik district): pure juniper stand in mixed forest with *Cedrus libani* and *Quercus coccifera*, on stump of *Juniperus excelsa*, 1,400 m, 3 May, 2004, leg. H.H. Dogan, HD1670; Ciglikara forest (Avlan Radyolink way): mixed forest with *Abies cilicica* subsp. *isaurica*, *Cedrus libani* and *Juniperus excelsa,* on stump of *J. excelsa*, 1,400 m, 4 May, 2004, leg. H.H. Dogan, HD1701; Koprulu Kanyon National Park — Dutluca and Ballibucak district: pure *Juniperus excelsa* forest, on stump of *J. excelsa*, 900 m, 23 April, 2005, leg. H.H. Dogan, HD2000. Kayseri: Yahyali — Burhaniye village: mixed forest with *Abies cilicica* subsp. *isaurica*, and *J. excelsa*, on stump of *J. excelsa*, 1475 m, 16 April, 2009, leg. H.H. Dogan, HD4611.

Macedonia—Valandovo: Chalakli: ass. *Pruno webbii-Juniperetum excelsae*, on stump of *J. excelsa,* 300 m, 13 November 2003, leg. H.H. Dogan & M. Karadelev, MAC34672.

This small and very rare species has an important medical value discovered only recently. Gordon et al. (2007) have extracted a xerocomic acid from a strain of *X. junipericola*. This acid has been identified as HIV-1 IN inhibitor.

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